Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-16. (Canceled)

17. (Previously presented) A preparation method of a multi-component composite membrane comprising steps of:

a) preparing a precursor film by injection of a polymer, which is used, for a support layer into an extruder;

b) annealing the precursor film at a temperature less than a melting point of the polymer;

c) coating both surfaces of the precursor film with a polymer solution, which is used for an active layer;

d) drying the coated precursor film;

e) low temperature-stretching the dried precursor film at a temperature less than room temperature;

f) high temperature-stretching the low temperature-stretched precursor film at a temperature less than the melting point of the polymer; and

g) heat-setting the high temperature-stretched precursor film under tension at a temperature less than the melting point of the polymer.

18. (Previously presented) The preparation method according to claim 17, wherein the polymer solution of step c) is coated on both sides of the precursor film by dip-coating.

19. (Previously presented) The preparation method according to claim 17, wherein a concentration of the polymer solution of step c) is equal to or greater than 0.01 wt%.

20. (Previously presented) The preparation method according to claim 17, wherein the drying of step d) is performed at a relative humidity ranging from 1 to 100%.

21. (Previously presented) The preparation method according to claim 17, wherein the drying of step d) is performed under saturated vapor pressure.

22. (Previously presented) The preparation method according to claim 17, wherein the drying of step d) is performed under a gas atmosphere selected from the group consisting of nitrogen, oxygen, carbon dioxide, and air atmosphere.

23. (Previously presented) The preparation method according to claim 17, wherein an active layer having a thickness in the range of 0.1 to 20 μm is formed through the coating and drying of steps c) and d).

24. (Previously presented) The preparation method according to claim 17, which further comprises the step of applying ion beams to either or both surfaces of the annealed precursor film with reactive gas between the steps b) and c).

25. (Previously presented) The preparation method according to claim 24, wherein the ion beam irradiation is performed by activation of electrons and a gas selected from the group consisting of hydrogen, helium, oxygen, nitrogen, carbon dioxide, air, fluorine, neon, argon, krypton, N_20, and a mixture thereof such that the gas has an energy ranging from 0.01 to 10^6 keV; and irradiating the surface of the precursor film with the ion beams.

26. (Previously presented) The preparation method according to claim 24, wherein the ion beam irradiation amount ranges from 10^5 to 10^{20} ions/ cm^2.

27. (Previously presented) The preparation method according to claim 24, wherein the ion beam irradiation is performed under a gas atmosphere selected from the group consisting of helium, hydrogen, nitrogen, ammonia, carbon monoxide, carbon dioxide, chlorofluoro methane, methane, and N_20 atmospheres, and mixtures thereof.

28. (Original) The preparation method according to claim 27, wherein the flow rate of the reactive gas ranges from 0.5 to 20 ml/minute.

29. (Canceled).

30. (Previously Presented) The preparation method according to claim 24, wherein the ion beam irradiation is performed under a vacuum ranging from 10^{-1} to 10^{-6} torr.

31-32. (canceled)

33. (Previously presented) A preparation method of a multi-component composite membrane comprising steps of:

a) annealing a precursor film comprising a polymer at a temperature less than a melting point of the polymer;

b) coating both surfaces of the precursor film with a polymer solution, which is used for an active layer;

c) drying the coated precursor film;

d) low temperature-stretching the dried precursor film at a temperature less than room temperature;

e) high temperature-stretching the low temperature-stretched precursor film at a temperature less than the melting point of the polymer; and

f) heat-setting the high temperature-stretched precursor film under tension at a temperature less than the melting point of the polymer.

34. (Previously Presented) The preparation method according to claim 33, wherein the polymer solution of step b) is coated on both sides of the precursor film by dip-coating.

35. (Previously Presented) The preparation method according to claim 33, which further comprises the step of applying ion beams to either or both surfaces of the annealed precursor film with reactive gas between the steps a) and b).

36. (Previously Presented) The preparation method according to claim 35, wherein the ion beam irradiation is performed by activation of electrons and a gas selected from the group consisting of hydrogen, helium, oxygen, nitrogen, carbon dioxide, air, fluorine, neon, argon, krypton, N_20, and a mixture thereof such that the gas has an energy ranging from 0.01 to 10^6 keV; and the surface of the precursor film with the ion beams.

Claims 37-58. (Cancelled)